## REMARKS/ARGUMENTS

I. Introduction:

Claims 2, 4, and 11 are amended herein. Claims 1-20 are pending.

II. Claim Rejections – 35 U.S.C. 102:

Claims 1-6, 8-9, 11-13, 17, and 19 stand rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Application Publication No. 2003/0161340 (Sherman)

Sherman discloses a method and system for optimally serving stations on wireless LANs using a controlled contention/resource reservation protocol of the IEEE 802.11e standard. More specifically, Sherman addresses setting parameters for the controlled contention/resource reservation protocol to optimize performance. A method of Sherman includes transmitting contention control (CC) frames, receiving resource reservations (RR) detailing bandwidth needs from stations, and controlling and setting parameters to optimize efficient use of the wireless medium.

Sherman does not disclose measuring link delays between a root bridge and a plurality of non-root bridges (or between an access point and a plurality of stations), receiving a measured link delay, or using measured link delays to coordinate transmissions in a CSMA/CA scheme, as set forth in claims 1, 8, 9, and 19.

In rejecting the claims, the Examiner cites Fig. 1 and paragraphs 8, 28-30, 34-35, 37-38, 40, 55, and 83 of the Sherman patent. Fig. 1 illustrates a WLAN comprising a plurality of mobile stations (MS) air-linked to an access point. The figure is described in paragraph 34. Paragraphs 8 is the Summary of the Invention and describes how an algorithm sets CCI (controlled contention intervals) parameters to optimize efficient use of the medium and reduce access delays for RR frames contending for the medium. Paragraphs 28-30 provide an overview of the IEEE 802.11 standard. Paragraphs 35 and 37 describes a hybrid coordinator which is responsible for allocating bandwidth on the

medium and includes a QoS facility, which provides a set of enhanced functions, formats, and frame exchange sequences. Paragraph 38 describes a superframe used in the control contention/resource reservation protocol. Paragraph 40 describes the contention free period during which enhanced stations may request transmission opportunities from hybrid coordinator without the variable delays of DCF based contention. Paragraph 55 describes how CCI rates for different service classes can be isolated from one another. Paragraph 83 describes which RR frames require feedback and how the feedback can be delayed until a next service cycle.

The Examiner has failed to identify any disclosure of measuring link delays and using these measured link delays to coordinate transmissions in a CSMA/CA scheme, as set forth in the claims.

In contrast to applicants' invention, Sherman controls parameters including for example, number of slots or contention opportunities and permission probability, in a controlled contention interval to optimize use of the medium. The system uses a contention free period during which stations may request transmission opportunities. Controlled contention takes place during a controlled contention interval, which is determined by hybrid coordinator. There is no measurement of link delays and use of measured link delays to coordinate transmissions.

Applicants' invention as set forth in the claims is particularly advantageous in that it adapts IEEE 802.11 techniques to networks with larger propagation delays, such as campus point-to-multipoint wireless networks. As further set forth in the dependent claims, applicants' invention uses measured link delays to adjust contention timing boundaries and a common time slot duration.

Accordingly, claims 1, 8, 9, and 19, and the claims depending therefrom, are submitted as patentable over the cited references.

Claims 2-4 are further submitted as patentable over Sherman which does not disclose calculating a common time slot value based on measured link delays,

distributing measured link delays and common time slot values, or aligning contention timing boundaries on measured link delays and common time slot values.

Claims 10-16, 17, and 18 are directed to an apparatus for operating or node or a point-to-multipoint wireless communication network, and are submitted as patentable for at least the reasons set forth above.

Claims 11-13 are further submitted as patentable for the reasons discussed above with respect to claims 2-4.

III. Claim Rejections – 35 U.S.C. 103:

Claims 10, 14-15, 18, and 20 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Sherman in view of U.S. Patent No. 6,990,116 (Young et al.)

As discussed above, Sherman does not disclose use of measured link delays to coordinate transmissions in a CSMA/CA scheme. The Examiner again cites paragraphs 28-30 of Sherman which simply provide an overview of the IEEE 802.11 standard.

The Examiner notes that Sherman does not disclose a link delay counter that measures delay between a root bridge and a plurality of non-root bridges and cites Young et al. with regard to this limitation. Young et al. describe a system for improving throughput over WLANs with mode switching. In rejecting the claims, the Examiner refers to Col. 6, lines 24-40 and 48-55 of Young et al. This first section cited describes a DCF access mechanism. When using the mechanism, a station wanting to transmit data senses the transmission medium and if it is idle, the station waits for an interval called distributed interframe space. If the medium remains idle, a data frame is transmitted. The DCF access mechanism is used to check to see if a medium is idle before transmitting data. The mechanism does not measure link delay.

Col. 6, lines 48-55 of Young et al. describe how a station begins to count down or decrement a backoff period set in a backoff counter. The backoff period is randomly set from within a contention window, and sets the amount of time for the backoff

counter to decrement to allow the station to transmit the data frame. The counter of Young et al. is thus not related to link delay and does not measure delay between a root bridge and a plurality of non-root bridges, as required by the link delay counter of claim 10.

Claim 7 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Sherman in view of U.S. Patent No. 6,895,450 (Mahany et al.). Claim 16 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Sherman in view of Young et al. and further in view of Mahany et al.

Mahany et al. disclose a communication network having bridging nodes which transmit a beacon to terminal nodes in power saving state that it has messages awaiting delivery. Hello packets are broadcast to have all unattached bridges attach to a bridge. Backward learning is used to determine how to reach a requesting bridge. After attaching to an attached node, the bridge determines its distance from the root node. The distance is used in routing selection.

Neither Sherman nor Mahany et al. show or suggest assigning transmission deferral times to non-root bridges based on measured link delays to give access preference to more distant non-root bridges, as set forth in claims 7 and 16. As previously discussed, Sherman does not disclose measuring link delays. None of the cited references disclose assigning transmission deferral times based on measured link delays. Mahany et al. use distances between nodes for routing calculations. In the system of Mahany et al. the nodes attach to the closest node to a root node. In contrast, applicants' invention gives access preference to more distant non-root bridges.

Accordingly, claims 7 and 16 are submitted as patentable over Sherman, Young et al., and Mahany et al.,.

IV. Conclusion:

For the foregoing reasons, Applicants believe that all of the pending claims are in condition for allowance and should be passed to issue. If the Examiner feels that a

telephone conference would in any way expedite prosecution of the application, please do not hesitate to call the undersigned at (408) 399-5608.

Respectfully submitted,

Cindy S. Kaplan
Reg. No. 40,043

P.O. Box 2448
Saratoga, CA 95070
Tel: 408-399-5608
Fax: 408-399-5609